| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/549,449 | 07/19/2006 | Magnus Johansson | 1505-1028-1 | 5502 |

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| EXAMINER |
|---|
| TORRES, JUAN A |

| ART UNIT | PAPER NUMBER |
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| 2611 | |

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

| | Application No. | Applicant(s) |
|---|---|---|
| | 10/549,449 | JOHANSSON, MAGNUS |
| ***Office Action Summary*** | Examiner | Art Unit | |
| | JUAN A. TORRES | 2611 | |

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on <u>19 July 2006</u>.
2a)☐ This action is **FINAL**.        2b)☒ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) <u>1-29</u> is/are pending in the application.
    4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5)☐ Claim(s) _____ is/are allowed.
6)☒ Claim(s) <u>10 and 11</u> is/are rejected.
7)☒ Claim(s) <u>1-9 and 12-29</u> is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☒ The specification is objected to by the Examiner.
10)☒ The drawing(s) filed on <u>19 July 2006</u> is/are: a)☐ accepted or b)☒ objected to by the Examiner.
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    a)☒ All    b)☐ Some * c)☐ None of:
      1.☒ Certified copies of the priority documents have been received.
      2.☐ Certified copies of the priority documents have been received in Application No. _____.
      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
    * See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date <u>09/14/2005</u>.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

## DETAILED ACTION

### *Priority*

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### *Information Disclosure Statement*

The information disclosure statement (IDS) submitted on 09/14/2005 is in compliance with the provisions of 37 CFR 1.97.  Accordingly, the information disclosure statement is being considered by the examiner.

### *Drawings*

The drawings are objected to because:

    a) Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated (see specification page 1 lines 12-17). See MPEP § 608.02(g).

    b) Figure 2 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated (see specification page 1 lines 17-26). See MPEP § 608.02(g).

    c) The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: "501" and "502" (see figure 5a).

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate

prior version of the sheet, even if only one figure is being amended. The figure or figure

number of an amended drawing should not be labeled as "amended." If a drawing figure

is to be canceled, the appropriate figure must be removed from the replacement sheet,

and where necessary, the remaining figures must be renumbered and appropriate

changes made to the brief description of the several views of the drawings for

consistency. Additional replacement sheets may be necessary to show the renumbering

of the remaining figures. Each drawing sheet submitted after the filing date of an

application must be labeled in the top margin as either "Replacement Sheet" or "New

Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner,

the applicant will be notified and informed of any required corrective action in the next

Office action. The objection to the drawings will not be held in abeyance.

### *Specification*

The disclosure is objected to because of the following informalities:

a) The recitation in the abstract "computer program product" seems to be
   improper, because a computer program product has no set definition (see
   rejection below); it is suggested to be changed to "computer-readable
   medium"

b) The recitation in page 4 lines 1-2 "The above stated object is achieved by
   means of arrangements according to claims 12, 13 and 21, by means of
   computer program products according to claims 10 and 11 and by means
   of methods according to claims 1 and 2" seems to be improper because
   reference to claim number in the specification is not appropriate because

claims could be changed or deleted during the prosecution of the case; it

is suggested to delete this paragraph.

Appropriate correction is required.

### *Claim Objections*

Examiner NOTE:

In an intention to advance the prosecution of the case, some of 35 USC § 112 2nd

paragraph problems have been indicated in the present Office action as a "Claim

Objections". Is the objections are not addressed properly the objections may be

presented as a proper 35 USC § 112 rejection in future Office actions.

Claims 1-29 objected to because of the following informalities:

a) Regarding claim 1, the recitation in line 1 of claim 1 "Method" seems to be

improper, because it seems to be improperly constructed (see claim 10

line 1); it is suggested to be changed to "A method"

b) Regarding claims 2-11, they are objected because they depend directly or

indirectly from claim 1 and claim 1 is objected.

c) Regarding claims 2-9, the recitation in line 1 of claims 2-9 "Method" seems

to be improper, because it seems to be improperly constructed (see claim

10 line 1); it is suggested to be changed to "The method"

d) Regarding claim 1, the recitation in lines 10 and 13 "bit stream" seems to

be improper, because it seems to be improperly constructed (see claim 1

line 2 and 35 USC § 112 second paragraph, lack of antecedent basic); it is

suggested to be changed to "modulated bit stream"

e) Regarding claim 2, the recitation in lines 2 (twice), 7, 8 and 11 "bit stream" seems to be improper, because it seems to be improperly constructed (see claim 1 line 2 and 35 USC § 112 second paragraph, lack of antecedent basic); it is suggested to be changed to "modulated bit stream"

f) Regarding claim 3, the recitation in line 2 "bit stream" seems to be improper, because it seems to be improperly constructed (see claim 1 line 2 and 35 USC § 112 second paragraph, lack of antecedent basic); it is suggested to be changed to "modulated bit stream"

g) Regarding claim 12, the recitation in lines 8 and 11 "bit stream" seems to be improper, because it seems to be improperly constructed (see claim 1 line 2 and 35 USC § 112 second paragraph, lack of antecedent basic); it is suggested to be changed to "modulated bit stream"

h) Regarding claim 13, the recitation in lines 2, 3, 7, 8-9, and 10 "bit stream" seems to be improper, because it seems to be improperly constructed (see claim 1 line 2 and 35 USC § 112 second paragraph, lack of antecedent basic); it is suggested to be changed to "modulated bit stream"

i) Regarding claim 14, the recitation in lines 2-3 "bit stream" seems to be improper, because it seems to be improperly constructed (see claim 1 line 2 and 35 USC § 112 second paragraph, lack of antecedent basic); it is suggested to be changed to "modulated bit stream"

j) Regarding claim 22, the recitation in lines 1-2 "bit stream" seems to be improper, because it seems to be improperly constructed (see claim 1 line

2 and 35 USC § 112 second paragraph, lack of antecedent basic); it is

suggested to be changed to "modulated bit stream"

k) Regarding claim 5, the recitation in line 4 of claim 5 "i.e.," seems to be

improper, because it seems to be improperly constructed (the phrase "for

example" renders the claim indefinite because it is unclear whether the

limitation(s) following the phrase are part of the claimed invention. See

MPEP § 2173.05(d)); it is suggested to be deleted

l) Regarding claim 9, the recitation in line 2 of claim 9 "VDSL" seems to be

improper, because it seems to be improperly constructed because this

acronyms has not been introduced previously in the claims; it is suggested

to be changed to "Very high data rate Digital Subscriber Line (VDSL)"

m) Regarding claim 12, the recitation in line 1 of claim 12 "Transmitter" seems

to be improper, because it seems to be improperly constructed (see claim

10 line 1); it is suggested to be changed to "A Transmitter"

n) Regarding claim 12, the recitation in lines 1-14 of claim 12 "Transmitter

(400) in a digital communication system comprising means for transmitting

a modulated bit stream comprising user data and dummy data, wherein

the modulated user data is represented by symbols from a symbol

alphabet M, the modulated dummy data is represented by a symbol $m_0$,

characterised by means (401, 402) for generating symbols $q_0, \ldots, q_j$

randomly from a predefined symbol alphabet Q being a subset of M,

means for scrambling the bit stream by performing bitwise modulo-2

addition between the modulated bit stream and the randomly generated

symbols $q_0, \ldots, q_j$ from Q, and means for transmitting said scrambled bit

stream, wherein the predefined symbol alphabet Q is defined so that the

transmit power level of the dummy data is substantially lower than the

transmit power level of the user data" seems to be improper, because it

seems to be improperly constructed (see claim 1); it is suggested to be

changed to: "A Transmitter (400) in a digital communication system

comprising means for transmitting a modulated bit stream comprising user

data and dummy data, wherein the modulated user data is represented by

symbols from a symbol alphabet M, the modulated dummy data is

represented by a symbol $m_0$, characterised by:

    (a)        means (401, 402) for generating symbols $_0, \ldots, q_j$ randomly

                from a predefined symbol alphabet Q being a subset of M,

    (b)        means for scrambling the bit stream by performing bitwise

                modulo-2 addition between the modulated bit stream and the

                randomly generated symbols $q_0, \ldots, q_j$ from Q, and

    (c)        means for transmitting said scrambled bit stream, wherein

                the predefined symbol alphabet Q is defined so that the

                transmit power level of the dummy data is substantially lower

                than the transmit power level of the user data" See also 35

                U.S.C. § 112, second paragraph" The claim(s) are narrative

                in form and replete with indefinite and functional or

operational language.  The structure which goes to make up

the device must be clearly and positively specified.  The

structure must be organized and correlated in such a manner

as to present a complete operative device.  The claim(s)

must be in one sentence form only."

o) Regarding claims 13-29, they are objected because they depend directly

or indirectly from claim 12 and claim 12 is objected.

p) Regarding claim 13, the recitation in line 1 of claim 13 "Receiver" seems to

be improper, because it seems to be improperly constructed (see claim 10

line 1); it is suggested to be changed to "A Receiver"

q) Regarding claim 13, the recitation in line 4 of claim 13 "a transmitter in

accordance with claim 10" seems to be improper, because it seems to be

improperly constructed (claim 10 is a method); it is suggested to be

changed to "a transmitter in accordance with claim 12"

r) Regarding claims 14-21 and 29, the recitation in line 1 of claims 14-21 and

29 "Transmitter" seems to be improper, because it seems to be improperly

constructed (see claim 10 line 1); it is suggested to be changed to "The

transmitter"

s) Regarding claim 16, the recitation in line 1 of claim 16 "transmitter (400) or

receiver (404) according to claim 12" seems to be improper, because it

seems to be improperly constructed (claim 12 is a transmitter, see claim

14); it is suggested to be changed to "transmitter (400) according to claim 12"

t) Regarding claim 16, the recitation in line 5 of claim 16 "i.e.," seems to be improper, because it seems to be improperly constructed (the phrase "for example" renders the claim indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention. See MPEP § 2173.05(d)); it is suggested to be deleted

u) Regarding claim 20, the recitation in line 3 of claim 20 "transmitter (400) or receiver (404)" seems to be improper, because it seems to be improperly constructed (claim 12 is a transmitter, see claim 14); it is suggested to be changed to "transmitter (400)"

v) Regarding claims 22-28, the recitation in line 1 of claims 14-21 "Receiver" seems to be improper, because it seems to be improperly constructed (see claim 10 line 1); it is suggested to be changed to "The receiver"

w) Regarding claim 24, the recitation in line 4 of claim 24 "i.e.," seems to be improper, because it seems to be improperly constructed (the phrase "for example" renders the claim indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention. See MPEP § 2173.05(d)); it is suggested to be deleted

### *Claim Rejections - 35 USC § 101*

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 10-11 are rejected under 35 U.S.C. 101 because the claimed invention is
directed to non-statutory subject matter.

Claims 10-11 are rejected because they claim data structures not claimed as
embodied in computer-readable media, and data structures not claimed as embodied in
computer-readable media are descriptive material per se and are not statutory because
they are not capable of causing functional change in the computer. See, e.g.,
Warmerdam, 33 F.3d at 1361, 31 USPQ2d at 1760 (claim to a data structure per se
held nonstatutory). Such claimed data structures do not define any structural and
functional interrelationships between the data structure and other claimed aspects of the
invention which permit the data structure's functionality to be realized. In contrast, a
claimed computer-readable medium encoded with a data structure defines structural
and functional interrelationships between the data structure and the computer software
and hardware components which permit the data structure's functionality to be realized,
and is thus statutory.

"A program product" is non-statutory because the terminology "program product"
alone has no set definition.

### Allowable Subject Matter

Claims 1-9 and 11-29 are allowed if the above objections are overcome.

The following is an examiner's statement of reasons for allowance: claims 1-9
and 11-29 are allowed because a comprehensive search of prior art failed to teach,
either alone or in combination, in a digital communication system for transmitting a
modulated bit stream comprising user data and dummy data, wherein the modulated

user data is represented by symbols from a symbol alphabet M, the modulated dummy
data is represented by a symbol $m_0$, the method is characterised by (a) generating
symbols $q_0, \ldots, q_j$ randomly from a predefined symbol alphabet Q being a subset of
the symbol alphabet M, (b) scrambling the bit stream by performing bitwise modulo-2
addition between the modulated bit stream and the randomly generated symbols $q_0, \ldots$
$q_0$ from Q, and (c) transmitting said scrambled bit stream, wherein the predefined
symbol alphabet Q is defined so that the transmit power level of the dummy data is
substantially lower than the transmit power level of the user data, as the applicant has
claimed.

Any comments considered necessary by applicant must be submitted no later
than the payment of the issue fee and, to avoid processing delays, should preferably
accompany the issue fee. Such submissions should be clearly labeled "Comments on
Statement of Reasons for Allowance."

## Conclusion

The prior art made of record and not relied upon is considered pertinent to
applicant's disclosure:

  a) Agazzi (US 6477200 B1) discloses a multi-pair gigabit Ethernet
     transceiver

  b) Asada (US 6553535 B1) discloses a power-efficient communication
     protocol

  c) Tzannes (US 6567473 B1) discloses seamlessly changing power modes
     in a ADSL system.

d) Tzannes (US 6667991 B1) discloses synchronizing seamless rate

   adaptation     Tzannes (US 6731695 B2) discloses implementing receiver

   transparent Q-mode

e) Limberg (US 20050074074 A1) discloses time-dependent trellis coding for

   more robust digital television signals.

f) Dent (US 6934317 B1) discloses communicating spread spectrum signals

   using variable signal constellations

g) Rakib (US 6937617 B2) discloses trellis encoding data for transmission in

   digital data transmission systems.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to JUAN A. TORRES whose telephone number is

(571)272-3119. The examiner can normally be reached on 8-6 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Mohammad Ghayour can be reached on 571-272-3021. The fax phone

number for the organization where this application or proceeding is assigned is 571-

273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system.  Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Juan Alberto Torres
05/05/2009

/Juan A Torres/
Primary Examiner, Art Unit 2611